Shiv Nadar University Chennai

End Semester Examinations 2022-2023 Even

Question Paper

Name of the Program: Common to B.Tech. AI & DS, B.Tech. CSE (IoT), B.Tech. CSE (CS)		Semester: II
Course Code & Name: **CS1002 PROGRAMMING IN PYTHON**		
Regulation 2021		
Time: 3 Hours		Maximum: 100 Marks

Q.No		Questions	Marks	CO	KL
Part-A: Short Answer Type (10 × 5 = 50)					

1	a	What will be the output of the following Python code?
		i = 1
		while True:
		  if i%3 == 0:
		  break
		  print(i)
		  i + = 1
			2	CO1	KL2

	b	If s = "Programming", then s[: 6 : 2] will give an output of a) None b) "margo" c) "ogram" d) "Por"	1	CO1	KL2
	c	If x = 10, y=12, z=0, find the value of the following Python expressions: a) x !=6 and y>5 and z<1 b) x<<2	2	CO1	KL2
2	a	Write a Python program to reverse a string and check if it is a palindrome, without using built-in functions.	5	CO2	KL3
3	a	Create a user-defined function that accepts a string as its input and perform the following: add 'ing' at the end of a given string (length should be at least 3). If the given string already ends with 'ing' then add 'ly' instead. If the string length of the given string is less than 3, leave it unchanged. Return the updated string.	5	CO2	KL3
4	a	Write a Python function to get a string made of 3 copies of the last 4 characters of a specified string (length must be at least 5) Example: Input: Python Output: 'thonthonthon'	5	CO2	KL3
5	a	For an online shopping application, a dictionary data structure is used to store the collection of products and their prices. Write a Python code to perform the following: a) Display all the products with its price to the customer.	5	CO2	KL3

		b) Read the order from the customer, if the ordered product is in the dictionary, then print the product id and price, if not present, ask the customer to reorder.			
6	a	A traffic monitoring system measure the speed of the vehicles and display the following message: a) If the speed is less than 70, print "Maintain the same speed" b) Otherwise, for every 5km above the speed limit 70, assign one demerit point for the driver and print the total number of demerit points. For example, if the speed is 80, it should print "Demerit points: 2" c) If the driver gets more than 12 points, a message "Your license is suspended" should be printed.	5	CO1	KL2
7	a	Given a list, find the frequency of each element and save it as the list of tuple. [(number, frequency)]. Input : test_list = [4, 5, 4, 5, 6, 6, 5] Output : [(4, 2), (5, 3), (6, 2)] Input : test_list = [4, 5, 4, 5, 6, 6, 6] Output : [(4, 2), (5, 3), (6, 3)]	5	CO4	KL2
8	a	Create a list with names of "n" students who have passed in JEE. Create another list with names of "m" students who have passed NEET exams. Perform the following operations: a) Find the list of students who have passed both exams. b) Print the students who have passed only in JEE as a new list. c) Print the students who have passed only in NEET as a new list. d) Print the students who have passed at least one exam.	5	CO4	KL3
9	a	Write a Python program to sort (both ascending and descending) a list of dictionaries by values using the lambda function.	5	CO4	KL3
10	a	A file named "Employee_details" has the following details: name of the employee, employee's hourly wage, number of regular hours and overtime hours. An employee's total weekly pay is calculated by multiplying the hourly wages and the number of regular hours plus any overtime pay. Overtime pay is calculated as total overtime hours multiplied by 1.5 times of hourly wages. Write a program to read the input file "Employee_details" and calculate the employee's overtime pay and total weekly pay and save it in a new file with employee's name as the file name.	5	CO5	KL2
Part-B: Long Answer Type (5 × 10 = 50)					
11	a	A smart crib has a timer that records a baby's sleeping pattern in seconds, temperature in Celsius. Develop a Python program to display the time using a function calc_time() in the hh:mm:ss pattern and temperature in Fahrenheit. Display suitable feedback about the sleeping pattern based on the given hint. Hint: 3-5 hours print " baby is in deep sleep", <2 hours print "baby is cranky"	5	CO3	KL3

	b	Eva, a cryptographer, always jumbles the text that she reads. Eg: She reads "Taj mahal" as "jat laham". Create a Python program that reads a string sentence and swaps the first and last character of each word in the string and displays the result.	5	CO2	KL3
12	a	Write a Python program to get a single string from two given strings, separated by a space and swap the first two characters of each string. Sample String : 'abc', 'xyz' Expected Result : 'xyc abz'	5	CO2	KL3
	b	Write a Python program to eliminate the duplicate values in a numeric sequence stored in a list, but preserve the order of the remaining items. The original list should be passed to a function named dedupe(), and the function then returns the updated list. For example, a = [1, 5, 2, 1, 9, 1, 5, 10] dedupe(a) should print [1, 5, 2, 9, 10] Hint: *If you convert the original list into a set and then convert this set back to a list will remove duplicate values, but set containers do not preserve the order of the original list sequence. So, you must solve it without using set().*	5	CO4	KL3
13	a	Write a Python program to build ATM Machine functionality. Acceptance Criteria: a) Create a Python function that asks ATM PIN as input and if the PIN is valid it should display Withdraw and Check Account Balance options. (Use string functions to check if a PIN has only 4 numeric characters). b) Create a Python function that allows the user to select an option. c) Create a separate Python function that implements the check account balance and withdraw functionality. d) After a successful withdrawal, the account balance should reduce. e) If a user enters an invalid withdrawal, you should notify the user with an error message.	10	CO3	KL3
14	a	Given is the following simplified data of a supermarket for online purchase: supermarket = { "milk": {"quantity": 20, "price": 25.00}, "biscuits": {"quantity": 32, "price": 20.00}, "butter": {"quantity": 20, "price": 70.50}, "cheese": {"quantity": 15, "price": 82.50}, "bread": {"quantity": 15, "price": 45.00}, "cookies": {"quantity": 20, "price": 52.80}, "yogurt": {"quantity": 18, "price": 41.30}, "apples": {"quantity": 35, "price": 120.40}, "oranges": {"quantity": 40, "price": 60.50}, "bananas": {"quantity": 23, "price": 50.00} } customers = ["Frank", "Mary", "Paul"] shopping = { "Frank" : [('milk', 5), ('apples', 5), ('butter', 1), ('cookies', 1)], "Mary": [('apples', 2), ('cheese', 4), ('bread', 2), ('pears', 3), ('bananas', 4), ('oranges', 1), ('cherries', 4)],	10	CO4	KL3

		"Paul": [('biscuits', 2), ('apples', 3), ('yogurt', 2), ('pears', 1), ('butter', 3), ('cheese', 1), ('milk', 1), ('cookies', 4)]} For every article there is a price per article and a quantity, i.e. the stock. The customers fill their carts, one after the other. Write a Python program to check if enough goods are available. Create a receipt for each customer with the following details: "quantity, name, unit_price, item_sum" in every row and the "total_sum" in the last row.			
15	a	What are exceptions and how are they handled in Python? Explain any five exceptions with a code snippet along with relevant comments.	5	CO5	KL2
	b	Write a Python program to read a file (assume the file is filled with some contents) and copy the contents to a new file. Write appropriate comments.	5	CO5	KL2

KL – Bloom's Taxonomy Levels
(KL1: Remembering, KL2: Understanding, KL3: Applying, KL4: Analyzing, KL5: Evaluating, KL6: Creating)
CO – Course Outcomes
